HC

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,316	11/14/2000	Lars-Olof Ohberg	1878/00037	4171

7590 05/06/2003

EDWARD A. PENNINGTON
SWIDLER BERLIN SHEREFF FRIEDMAN, LLP
3000 K STREET
SUITE 300
WASHINGTON, DC 20007

EXAMINER
SAADAT, CAMERON

ART UNIT	PAPER NUMBER
3713	14

DATE MAILED: 05/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/700,316	OHBERG ET AL.	
	Examiner	Art Unit	
	Cameron Saadat	3713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 April 2003* .

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

In response to the Request for Continued Examination filed 4/15/03, Amendment filed 3/17/03 has been entered and claims 7-16 are pending. Claims 1-6 have been cancelled.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The antecedent basis for "each sample value" has not been clearly set forth.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jarrell et al. (U.S. Patent No. 4,215,347; hereinafter Jarrell) in view of Anderson.

Regarding claim 7, Jarrell discloses a method of simulating a target seeker system, the method comprising: generating a target seeker command position from a beacon-signal source 1 transmitted by RF transmitter 11 (column 4, lines 52-65); generating a target seeker actual position feedback from antenna 2 to comparator 4 (see Fig. 1); generating a trouble signal by determining a difference between the target seeker command position and the target seeker actual position; determining an error in amplitude and angle of a vector that specifies a direction to a target (Col. 3, lines 20-25); based upon the error in amplitude and angle of the vector generated in tracking error detection system 16, transmitting through port wave guide 4, an actual value signal to the weapons system.

Regarding claims 7 and 13, Jarrell discloses a method of simulating a target seeker system, but does not explicitly suggest that it would be suitable for *testing* an aircraft weapon system (as per claim 7), wherein conditions are simulated to affect input to a missile control (as per claim 13). However, Anderson discloses a method of *simulating a missile during testing of an aircraft weapon system.* In view of Anderson, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the target seeking simulator described in Jarrell, by simulating the target seeking system *during* testing of a weapon system for simulating input conditions of a missile control system, in order to test the accuracy of the guidance system of a weapons system and to further utilize simulation data for validation purposes (See Anderson P. 553 ¶ 4 – P. 554, ¶ 1; P. 554, ¶'s 2-4).

Regarding claim 8, Jarrell discloses a method wherein the trouble signal is measured continuously in an interface and wherein the error in amplitude and phase angle comprises a difference between a vector corresponding to the target seeker command position and a vector corresponding to the target seeker actual position, the method further comprising: transmitting the error in amplitude and phase angle to missile model compensation elements 18 and 22 in the simulator (See EL, AZ Error Signals in Fig. 1)

Regarding claim 9, Jarrell discloses a method wherein for each value of the trouble signal the missile model calculates a new actual value of the target seeker actual position and transmits the actual value through wave guide 4 to the interface in the form of an actual value for an amplitude of the target seeker command position vector and phase angle of the target seeker command position vector (Col 5, line 4 – Col. 6, line 4).

Regarding claim 10, Jarrell discloses a method wherein the interface 4 and 10 reproduces a continuous actual value signal from the values for amplitude and phase angle received form the missile model (Col 3, lines 3-15).

Regarding claim 11, Jarrell discloses a method wherein interface 10 inverts the actual value signal (See Fig. 1, ref. 10).

Regarding claim 12, Jarrell discloses a method wherein the trouble signal is generated in a summing unit 8 in the weapons system by summing the command signal from the weapons system and the inverted actual value signal in the summing unit (Fig. 1, refs. 8, 10, 11).

Regarding claim 14, Jarrell discloses a method wherein the trouble signal is utilized as a control signal for the target seeker (Col. 4, lines 3-15).

5. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jarrell et al. (U.S. Patent No. 4,215,347; hereinafter Jarrell) in view of Anderson, further in view of Phillips.

Regarding claims 15 and 16, the combination of Jarrell and Anderson discloses all of the claimed subject matter including an interface 10 for receiving and generating signals, yet it is not explicitly stated that the generated and received signals are *time discrete signals*. However, Phillips discloses a method of modeling a feedback control system comprising time discrete signals (See P. 468). Hence, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the feedback system described in the combination of Jarrell and Anderson by applying a linear time-invariant discrete feedback system, in light of the teachings of Phillips, in order to allow modeling of *digital* controllers that can accept information only at discrete values of time (see Phillips P. 469).

Response to Arguments

6. Applicant's arguments with respect to claims 7-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Hull and Johnson (Institution for Simulation and Training) – disclose a method of providing a linearized model of a missile feedback control system.

- Wedel, Jr. (USPN 5,117,230) discloses a method of testing missile radar by simulating a missile a missile to target encounter.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cameron Saadat whose telephone number is 703-305-5490. The examiner can normally be reached on M-F 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Valencia Martin Wallace can be reached on 703-308-4119. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

CS
April 30, 2003

S. THOMAS HUGHES
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700